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1 Introduction

The After-LIFE Plan aims to present the project’s results that could be transferable and shared with the stakeholders in the after-life period and in parallel to identify a communication strategy to continue the project dissemination after the project end.

The LIFE DIANA project (LIFE16 ENV/GR/000461) was implemented between June 2017 and December 2021 and was co-funded by the European Commission under the framework of the LIFE+ programme. It was carried out by the following consortium:

Motor Oil Hellas, which was the coordinator of the project, and it was responsible for the installation and operation of the sludge stabilisation pilot plant.

National Technical University of Athens, which has developed the innovative sludge stabilisation process.

Power Media Productions, which was responsible for the dissemination activities of the project.

Municipality of Rafina-Pikermi, which was responsible for the construction and operation of the pilot site where the engineered soil performance as landfill material was observed.
The project consortium is composed of a stakeholder of the industrial sector, MOTOR OIL HELLAS (MOH), the Laboratory of Metallurgy of National Technical University of Athens (NTUA), with considerable expertise on industrial minerals processing for the production of tailored made material qualities and on stabilisation of organic and heavy metal pollutants, the municipality of Rafina-Pikermi (RAFIMUN), Greece, which contributed at the pilot testing of the engineered soil and the POWER MEDIA PRODUCTIONS S.A. (PMP), a company with a versatile experience in strategic communication, dissemination actions, marketing and advertising.

The LIFE DIANA project aims at the valorization of petroleum refinery sludge, currently classified as hazardous wastes, and their efficient transformation into products, valorized sludge mixture and engineered soil, that will be used in other industrial activities. The petroleum refinery sludge treated with properly modified industrial minerals available in Greece and other countries, will result in the generation of a valorized sludge mixture and the ultimate conversion of a hazardous waste material into a higher added value commercial product called engineered soil. The produced engineered soil can be used in various development stages of landfill construction and restoration with a significant cost-effective impact. Due to its tailored properties, the engineered soil is able to substitute the materials currently used in landfills for the creation of the various layers.

The main objectives of the project are the following:

- Identification and development of the optimum qualities of Industrial minerals and technological solutions for the production of valorised sludge mixture and engineered soil with minimum environmental risks and meeting the specifications set by the relevant EU and national legislation.
- Selection of the optimum mixing solutions (compost, soil, valorised sludge mixture) for the production of an engineered soil suitable to be used on landfills construction and restoration or quarry rehabilitation.
- Design, construction, testing, and evaluation of a low-cost pilot scale plant with minimum CO2 emissions for producing valorised sludge mixture with appropriate properties to be used for the synthesis of the engineered soil.

2 Project Actions

In order to achieve the aforementioned goals four main categories of actions were foreseen in the project grant agreement:

The “Preparatory Actions”, where an overview of the EU and Greek legislation was presented. The criteria for acceptance of wastes in municipal landfills as well as the construction and operation techniques and liners properties of three case studies of different landfills (non-hazardous, hazardous, and contaminated soil landfills) were determined and are presented within the relevant deliverables. Moreover, pilot plant flowsheet has been designed and main infrastructure equipment has been determined.

The “Implementation Actions” which were the project’s core actions and contributed to the project’s primary aim. Through these actions the sludge stabilisation process was developed in laboratory scale, and it was then implemented in pilot scale. Two pilot plants, one in MOH premises and one in RAFIMUN boundaries were constructed and operated for the evaluation of the petroleum sludge stabilisation in the valuable material, the engineered soil and the produced engineered soil performance as landfill material.

The “Monitoring of the impact of the project Actions” focused at assessing the effectiveness of both
pilot trials regarding the engineered soil performance and the dissemination actions of the project, quantifying their impact on the environment as well as on the community and detecting project strengths and weaknesses.

The “Public awareness and dissemination of results Actions” which focused on raising public awareness on the innovative stabilisation process of sludges to engineered soil which can be used in landfill activities and on networking with stakeholders through different activities, via the presentation of project’s progress and results.

The “Project management Actions” which facilitated the coordination and cooperation among the beneficiaries and the communication of the consortium with CINEA towards the successful implementation of the project within the GA guidelines and timeline.

3 Technological and Methodological Innovations

The overall innovation of the project is the development of customised technologies and materials for the valorisation of petroleum refinery sludge and the production of the engineered soil which can be used in landfilling. The engineered soil applicability and the production of valorised sludge mixture are demonstrated at pilot scale in order to assess the performance of both the valorised sludge mixture and the engineered soil in accordance with the relevant national and European standards and legislation. Hence, the project contributes to proving the feasibility of a new green waste valorisation technology directly impacting on the performance of the petroleum refining sector.

Through the LIFE DIANA project, petroleum refinery sludge is transformed to a valuable product that will be used as construction material at various other industrial applications, such as in landfills construction and restoration and rehabilitation/revegetation of abandoned quarries. It is highlighted that the use of industrial minerals for the petroleum refinery sludge stabilisation and the use of the developed engineered
soil as daily cover and liner at landfills is new and has never been studied, tested, or applied elsewhere. The application of the proposed solution offers the following environmental advantages:

1. valorisation of hazardous wastes and their transformation into a valuable material of minimized environmental risk.

2. increase the landfill capacity by reducing the daily layer thickness due to the use of the innovative engineered soil that exhibits significant lower permeability in comparison to the conventional materials currently used (soil and construction and demolition wastes CDW).

It is noted that LIFE DIANA innovative method was developed in order to re-use wastes of oil refineries as raw material for the production of high value-added products. The implementation of this technology contributes to the shift towards a more circular economy and stimulates the synergy between the oil processing industry, the natural resources (minerals) industry and the environmental industry (landfills).

To conclude with, the LIFE DIANA method that was developed promotes the eco-friendly and sustainable valorisation of Petroleum Refinery Sludge, environmentally friendly practices, and products to be used in other industrial activities, like municipal waste landfills construction and restoration and remediation/revegetation of abandoned quarries. All the developed methodologies and tools were applied and tested at pilot scale in MOH pilot plant and in RAFIMUN landfill pilot site and their performance were assessed according to the relevant national and EU legislation and materials requirements for landfills construction and restoration.

Figure 1: Circular economy approach to hydrocarbon industry wastes through wastes valorisation.
4 Relevance to Environmental Policy and Legislation

4.1 EU Policies

LIFE DIANA is strictly related to the following EU policies:

- Circular Eco
- PFP – 2013/179 – Recommendation – Use of common methods to measure and communicate the life cycle environmental performance of products and organizations

A review of the EU and national legislation regarding the waste management and the acceptance procedures in landfills is provided with the deliverable “Review of EU and national legislation in the criteria for acceptance of wastes in municipal landfills” (D A1.2).

4.2 New Waste Framework Law of Greece 4819/2021

The new Waste Framework Law of Greece, 4819/2021 and article 6 in particular can have a significant impact on the project sustainability.

Article 6 describes the prerequisites for declassification of wastes. In paragraph 1, it is stated that waste that has undergone recycling or otherwise recovered is considered to have ceased to be waste if the cumulative conditions are met:

(a) the substance or object is intended to be used for specific purposes.
(b) there is a market or demand for the substance or object in question.
(c) the substance or object fulfils the technical requirements for the specific purposes and meets the legislation and standards applicable to products; and
(d) the use of the substance or object will not lead to overall adverse environmental or human health impacts.

In paragraph 3 of the same Article it is declared that if no criteria for waste declassification have been established by the European Commission or at national level the respective management body or producer of waste is given the opportunity to submit a substantiated request to the General Secretariat for Waste Management Coordination, which analyzes, per category of waste, the compliance with the prerequisites of cases a) to d) of par. 1, following the guidelines of the European Commission. The procedure for the declassification process is described in detail.

In paragraph 4 of Article 6, it is described that the natural person or legal entity who:

(a) uses, for the first time, material which has ceased to be waste and has not been placed in the market or
(b) places a material on the market for the first time after it has been declassified as waste, shall ensure that the material meets the relevant requirements under the chemicals and products legislation. Provided
that the conditions set out in paragraph 1 are met, for material which has been declassified as waste, the legislation on chemicals and products shall apply and be declared. In paragraph 3 of article 72 of the new Waste Framework Law it is described that in case it is necessary, detailed criteria may be set for the application of Article 6 (par. 1) on when certain types of waste that have been recycled or otherwise recovered are considered to have ceased to be waste, taking into account the potential adverse effects of the substance or object on the environment and human health. The detailed criteria ensure a high level of protection of the environment and human health, facilitate the prudent and rational use of natural resources, and include the following:

(a) permitted waste inflow materials in the recovery process.
(b) permitted processes and processing techniques.
(c) quality criteria for the declassification of waste material resulting from the recovery process, in accordance with applicable product specifications, including limit values for pollutants, where appropriate.
(d) requirements, according to which the management system must demonstrate its compliance with the criteria for declassification of waste, including quality control, self-monitoring, and accreditation, where appropriate, and
(e) requirement for a declaration of conformity.

4.3 New Circular Economy National Plan

The new circular economy national plan is basically a solid roadmap of the upcoming 71 actions that the Greek government will implement in the near future period of 2021-2025 in order to render the Greek economy both sustainable and competitive. These actions are grouped into 5 defined pillars.

1. Sustainable production and industrial policy, eg: ecological design, ecological certification, industrial symbiosis, tax exemption policy.
2. Sustainable consumption, eg: promotion of public green contracts, maintenance services and services of reuse.
3. Less waste/byproducts with added value, eg: funded programs to prevent high volumes and legislation policy towards prevention.
4. Horizontal actions, eg: national observatory, volunteering contracts, indexes.
5. Prioritization of product categories that need to be tackled against, eg: plastic, batteries, and vehicles.
4.4 Policy Related Conclusions

In case of the engineered soil the potential uses have been studied and the outcomes showed that it can be used as a landfill construction material. The engineered soil already meets the technical specifications to be used as daily cover, as bottom layer or even as vegetation cover after the end of the landfill cell life.

The engineered soil has undergone Leachability/Extractability tests. The results were compared with the limits for landfills for inert, non-hazardous, and hazardous waste established by Decision 2003/33 / EC establishing criteria and procedures for the acceptance of waste at landfills in accordance with Article 16 and Annex II of Directive 1999/31 / EC.

The results of the chemical analysis of the wash solutions according to ELOT EN 12457.02 confirmed that the stabilized mixture meets the criteria for acceptance of waste in landfills for non-hazardous waste. For the assessment of engineered soil in the event of a fire, it was subjected to flashpoint measurements according to ASTM D 93 and ASTM D92. The results displayed that the engineered soil is not classified as flammable” (European Regulation 1272/2008).

According to the AASHTO system the engineered soil is classified as in category A-1-b Stone fragments, gravel and sand which is acceptable as construction material in landfills.

Moreover, the engineered soil is evaluated in terms of water permeability according to E105-86. The Greek legislation describes that the criterion for a soil in order to be accepted as insulating layer at the bottom of a landfill is the permeability ≤10-9. The engineered soil is very close to this requirement. In order to meet this prerequisite, it can be used as bottom layer of landfills combined with a Geosynthetic Clay liner (GCL).

Furthermore, the market analysis showed that there is a great number of potential end-users including landfills and quarries of aggregates (public, municipal/community and private). It is of great importance that the outcomes of LIFE-DIANA are disseminated to the stakeholders. Thus, it can be ensured that there will be demand for the engineered soil as construction material in the future.

The new Waste Framework Law opens the window of opportunity for the engineered soil to be declassified as waste and describes the procedure to be evaluated as new construction material in certain applications meeting specific conditions.

Moreover, the LIFE DIANA project complies with the new national plan for circular economy as it strongly promotes the reuse of sludge waste by producing a material which can be reintroduced in the industry with an added value, as exactly the circular economy concept outlines. More precisely, the LIFE DIANA project adheres to the pillars 1 and 3 of the circular economy rules:

Regarding the 1st pillar, “Determination of specifications and requirements for secondary materials and sustainable products”, a by-product of an industry can be converted into a new material with added value in another industry. In case of the LIFE DIANA project, the Engineered Soil produced by oil sludge can be used as bottom, intermediate, top cover and vegetation material in quarries and landfills.

According to the 3rd pillar and the relevant actions “Implementation of relevant policy with regards to circular economy” and “Development of decategorization criteria of waste/by-products and reconsideration of such by-products as materials and substances that are actual outputs of the established process” the development of criteria and standards for the waste decategorization is foreseen by the Circular economy national plan. Although there is a general legal framework for the waste decategorization process provided by the new Circular economy national plan and the Waste law 4819/2021, more detailed criteria and standards should be specified with additional legal decisions, so that it is feasible that each declassified
waste could find application at an end-user. The declassified waste should, then, be included in the Environmental Terms approval decision of the potential end-user. This is a key issue that directly concerns the LIFE DIANA project, regarding the declassification of the ES, so that its end-users can be identified and engaged.

5 Demonstration Value and Transferability

2 pilots served as demonstration sites of the innovative stabilization process.

Pilot 1 is the stabilization unit of the Petroleum Refinery Sludges which is located within the Motor Oil Hellas Refineries in Corinth.

Figure 2: Pilot 1 in Motor Oil Hellas Refineries in Corinth
Pilot 2 is the pilot site in Attica’s Prefecture Landfill where the produced engineered soil was disposed and tested as vegetation, daily and bottom cover in landfills.

Figure 3: Pilot 2 in Attica’s Prefecture landfill site
Project’s outcomes

- Drastic reduction of the waste volumes produced by the Greek petroleum refining industry
- 1.500 tons of petroleum refinery sludge were stabilised into 3.000 m³ of valuable product (Engineered soil)
- New processes and technologies were developed, by using naturally occurring industrial minerals that lead to the elimination of petroleum refinery sludge.
- A new material (Engineered soil) was developed by transforming potential wastes into commercial products of higher value to customers
- The innovative material, the Engineered soil, is suitable for use in landfills as vegetation, daily and bottom cover
- A new business model was developed involving stakeholders of industrial waste, mineral raw materials providers, and Engineered Soil end users (landfills, quarries etc.)
- Jobs opportunities were created
- The environmental and land footprint of the oil refining industry is reduced
<table>
<thead>
<tr>
<th>A/A</th>
<th>Activity</th>
<th>Partners involved</th>
<th>Stakeholders involved</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Contact the identified oil industry stakeholders</td>
<td>MOH</td>
<td>Oil industry</td>
</tr>
<tr>
<td>2</td>
<td>CONCAWE</td>
<td>MOH</td>
<td>Oil industry</td>
</tr>
</tbody>
</table>
| 3   | Contact Raw Materials Suppliers  
- Imerys S.A.  
- Aegean Perlite S.A.  
- Perlite Hellas S.A. | NTUA | Raw materials suppliers, scientific community |
| 4   | Activities focusing on engineered soil end-users  
- Contact with EDSNA (Landfill owner)  
- Contact with NORDIA S.A. (Quarry owner) | RAFIMUN | Community, policy makers |
| 5   | Annual Meeting of Perlite Institute | NTUA | Raw materials suppliers |
| 6   | EIT Raw Materials: 3rd Greek Raw Materials Community Dialogue | NTUA | Raw materials suppliers, scientific community |
| 7   | Raw Materials Week | NTUA | Raw materials suppliers, scientific community, EU decision makers |
| 8   | LIFE PureAgroH2O project conference | MOH | Community |
| 9   | Networking Event of Greek LIFE projects - Green Fund | NTUA | Community |
| 10  | Networking with LIFE IP-CEI Greece | NTUA, MOH | Community |
| 11  | Networking with SWAN project (INTEREG) | PMP | Community |
| 12  | Circular Economy platform | MOH, PMP | Community |
| 13  | European Circular Economy Stakeholder Platform | MOH, PMP | Community |
| 14  | Project of the month - Green Fund | MOH | Community |
| 15  | LIFE Greek Task Force Event on 2020 call - Green Fund | MOH | Community |
| 16  | Online Conference of Green Fund | MOH | Community |
| 17  | RMs Manager | NTUA | Students |
| 18  | Workshops | - | Suppliers, oil industry, users of engineered soil, community, government |
|     | 1st     | ALL | |
|     | 2nd     | ALL | |
| 19  | Final Conference | ALL | Suppliers, oil industry, users of engineered soil, community, government |

Table 1: Transferability and replication activities
LIFE DIANA business model

Based on the technological outcomes deriving from the implementation of both pilots, pilot 1 in MOH refineries and pilot 2 at EDSNA facilities, it seems that this technology should be further exploited and replicated on the one hand to other customers for the management of their sludge waste and on the other hand to other waste products of the oil industry that need to be valorised and stabilized such as used engine oils and lubricants.

It is therefore appropriate to create a Joint venture between stakeholders and investors that are interested in investing in this innovative technology. The Joint venture scheme of the LIFE DIANA technology exploitation is the SPV. More specifically, the SPV will undertake the actions for the further optimization of the technology and the scale up and the declassification of Engineered Soil, will promote the sale of the technology and will investigate its application to other types of waste. Therefore, an SPV could be possibly formed in case that an adequate number of interested parties, willing to participate and invest in DIANA technology are identified.

NTUA as the technological expert and intellectual properties (IP) owner of DIANA technology will promote the technology and identify potential customers interested in the LIFE DIANA concept with the view either to acquire petroleum refinery sludge stabilisation process or to invest in the SPV. Providing that the necessary funds will available, NTUA will be responsible for the further economic and technical optimization of the proposed solution during the after-life period. NTUA and/or SPV in parallel to the aforementioned actions also intends to submit proposals for funding in relevant calls of the Greek Authorities (e.g., ESPA projects), Resilience and Recovery Fund (RRF), new development national law, new
legislation on industrial parks. More specifically, NTUA will seek for calls concerning the reinforcement of research actions that have already been studied on a pilot scale and their final demonstration must be established in order to lead to commercialization path.

MOH is interested in further adopting the LIFE DIANA technology and actively implement it on an industrial scale. However, this can only be done when LIFE DIANA solution’s maturity and licensing of running the technology as standard operation will be feasible, according to the legislation framework. More precisely, the declassification of the engineered soil is important in order the Engineered Soil to be delivered to the end users. By the time these steps are well fulfilled, and the LIFE DIANA solution becomes fully marketable and more competitive, then MOH will be able to examine the possibility of integrating the valorization sludge treatment method as a standard company procedure according to its current environmental licensing processes.

RAFIMUN will serve as the main key contact for the technological equipment and relevant procedures related to the landfill pilot. RAFIMUN would be considered as outsourced consultant and technology provider with the responsibility to conduct essential technical studies and provide technical support tailored to the installation and operation profile of the pilot equipment, as decided by the potential customer of the LIFE DIANA concept. Furthermore, RAFIMUN is willing to proceed with the Engineered Soil application at its 2 designated sites and to continue the communication with EDSNA and NORDIA provided that a declassification of Engineered Soil is undergone and if appropriate funding will be available (e.g., other LIFE program, RRF). The potential technology transfer and promotion actions as well the research supporting actions will be implemented with the synergy of NTUA Technology Transfer Office.

Figure 4: Technology Transfer Office scheme
The functions/services of the Technology Transfer Office are included in the lines of action:

**Action axis 1**: Transfer of technology and know-how, dissemination of results, management and protection of intellectual property and connection to the productive network of the country. The first axis concerns the utilization of research results and the capabilities of researchers, the evaluation of their potential for the benefit of NTUA and society, the cooperation with relevant organizations and agencies (such as the General Secretary of Research Innovation and the Research Centers of the country) and abroad.

**Action axis 2**: Promoting innovative ideas and promoting knowledge-intensive business acceleration. One of the main goals of the Technology Transfer Office is the contribution and support of the wider scientific community in its possible integration into a business process or quasi-business process.

**Action axis 3**: Support of NTUA research activity and information / training on issues related to research and entrepreneurship. The third line of action concerns the wider support of the members of the polytechnic community, the expansion of the scope of the research effort, as well as the correct treatment of current issues related to the process of linking research with entrepreneurship and production. Indicative stakeholders that could be interested in DIANA technology are other refineries or industries with oily wastes, raw materials suppliers, landfill, and quarries owners. They may also become investors and members of the SPV. Active involvement of those interested parties promote a rapid leverage of the project outputs and the commercial network of the LIFE DIANA project will be greatly expanded also through the individual stakeholders’ networking.

To conclude with, the SPV will undertake all necessary steps required for the declassification procedure in accordance with the relevant legislative framework. As it is aforementioned, there are critical points in the current legislation that need to be further specialized, however the SPV will be close to the legislation updates and will be open to collaborations with other LIFE projects that deal with the legislation framework of the declassification of wastes. Thus, when the criteria and standards for the declassification of each waste category will be specialised, the SPV will be able then to reach out for customers in order to proceed with the penetration of the LIFE DIANA technology in the market.

Based on the business model-plan analysis, the following replication activities have been discussed among the partners during the project implementation and they are planned to continue in the 3 years after life-period.

A. **Application of Engineered Soil at 2 sites in Municipality of Rafina-Pikermi**
B. **Application of ES at EDSNA landfill**
C. **Application of ES at a quarry of NORDIA SA**

It is highlighted that according to the business plan analysis the successful replication of the aforementioned activities can be feasible provided that a declassification of the Engineered Soil is undergone and if appropriate funding will be available (e.g., other LIFE program, RRF).
6 After-life Communication and Dissemination Strategy

6.1 Communication strategy’s main target groups

Target groups

- Oil industries
- Landfills
- Quarries
- Raw Materials suppliers
- Municipalities

6.2 Brief overview of past dissemination activities and products and their results

- **The LIFE DIANA logo** was created, which is the main communication element for the dissemination of the project’s objective and outcomes.

- **The project’s communication identity** was created. An overall graphic approach applied to all the communication and dissemination material of the LIFE DIANA project.

- **The project’s press kit** is completed.

- **LIFE DIANA website** (www.lifediana.eu) is available in English and Greek.

The website of LIFE DIANA is enriched and updated with news and developments of the program. The process of optimising the website of the LIFE DIANA project with SEO (search engine optimisation) has started, with the aim of ranking the LIFE DIANA page in higher positions of search results through search engines.
• The project’s Notice board is printed and displayed in several places, on beneficiaries’ facilities, available to the public.

• The project’s informative leaflet (available in English and Greek) is completed and shared among partners and has been used in several occasions during the dissemination initiatives of LIFE DIANA beneficiaries.

• LinkedIn and Twitter project’s account are created, and posts are uploaded.

• 6 newsletters were released by the end of the project. The 1st was sent on 14.03.2019, the 2nd was sent on 24.03.2019, the 3rd was sent on 30.09.2019, the 4th was sent on 5.06.2020, the 5th was restructured due to the extension of the duration of LIFE DIANA and was published in January 2021 and the 6th was published in July 2021.

• The 1st general video of the project which presents the innovative solution proposed by the LIFE DIANA project was completed at the beginning of the project and it was uploaded on the website in English and Greek version.

• The 2nd video is dedicated on the petroleum refinery sludge pilot plant describing the stabilisation process and the production of the engineered soil. It was created in Motor Oil Refineries in Corinth. It was also uploaded on the website in English and Greek version.

• The 3rd video was created in the area of EDSNA at the FYLIS Landfill. The Municipality of Rafina – Pikermi has constructed an area in the landfill for the evaluation of the engineered soil and specific pilot tests designed by NTUA have been carried out. The engineered soil is tested as vegetation, daily and bottom cover in landfills.

• The 1st LIFE DIANA workshop was held on 06.05.2019 at “N.J.V. ATHENS PLAZA HOTEL”, Syntagma square - Athens where the consortium had the opportunity to exchange knowledge with the stakeholders and discuss about the LIFE DIANA project’s outcomes and progress.

• The LIFE DIANA project was nominated as the “project of the month” for June 2019 by the Greek Green Fund and relevant presentation of the project’s objectives, best practices and outcomes were included.

• The LIFE DIANA was also presented on 02.07.2019 during the Networking Event of Greek LIFE projects, an initiative of the Greek Green Fund at Villa Kazouli, Kifissia, Greece.

• The LIFE DIANA project has been subscribed on the

  - Circular Economy Platform

  - European Circular Economy Stakeholder Platform
    https://circulargreece.gr/information/
The LIFE DIANA project was presented together with other LIFE projects by Mr Protopapas, Director of the Green Fund during a conference at the Royal Olympic Hotel in Athens, on the 17th of January 2020. That conference was organized in the framework of the LIFE PureAgroH2O project, where it was highlighted the importance of LIFE programs for the industry and the provision of innovative solutions through LIFE projects.

The LIFE DIANA project was presented at the online conference of Green Fund on the 23rd of March 2021. The conference was organized by the Green Fund, the Ministry of Environment and Energy and the Greek LIFE task force (GR LTF), in collaboration with Skywalker.gr for the GRBossible initiative that supports the start-up entrepreneurship.

6.3 A List of present dissemination activities and products & their results

- A new, larger, and more detailed Notice Board is designed, and it is placed on the 2 Pilot sites.

- More permanent, metallic, LIFE logos are attached on the equipment of Pilot 1 (MOH) and pilot 2 premises (EDSNA).

- The 2nd workshop was held virtually on the 4th of October 2021. Fruitful discussion between the participants on the project’s highlights was carried out at the end of the workshop.

- Final Conference was also virtual (in respect to COVID19 pandemic safety provisions) on the 16th of December 2021. Relevant preparations (agenda, participants, invitations, choice of virtual conference tool etc.) were elaborated by PMP.
**ΣΥΝΕΔΡΙΟ ΟΛΟΚΛΗΡΩΣΗΣ ΕΡΓΟΥ LIFE DIANA**  
PΕΜΠΤΗ 16 ΔΕΚΕΜΒΡΙΟΥ 2021

**Online Meeting**

**Figure 5: Final Conference agenda**

<table>
<thead>
<tr>
<th>ORA</th>
<th>ΠΡΟΓΡΑΜΜΑ</th>
</tr>
</thead>
</table>
| 13:00-13:15 | Κλειστόριο  
Μίκης Παπάδης, Το έργο LIFE DIANA, MOTOR OIL |
| 13:15-13:25 | Παρουσία Προσωπικού, Χρηματοδοτικό Πρόγραμμα Πράσινων Τομέων και LIFE, ΠΡΑΣΙΝΟ ΤΑΜΕΙΟ |
| 13:25-13:35 | Σοφία Παπαγεωργίου, Εξεταστική περιεξομολόγηση του έργου LIFE DIANA, ΝΕΣΣΟ |
| 13:35-13:45 | Δημήτρης Σαξανάς, LIFE-POLARIS: "Εποπτεία της Κοινωνίας  
Διαμόρφωση της Κοινωνίας στο Κλίμα" (LIFE18 KL/GR/000015), ΠΡΑΣΙΝΟ ΤΑΜΕΙΟ |
| 13:45-13:55 | Φώτης Κρύστης, Δράσης Κοινωνίας Εκπαίδευση ΔΕΑ ΕΚΠΑΙΔΕΥΣΗ ΕΝΕΡΓΕΙΑ ΑΝΑΚΑΛΥΨΗΣ |
| 13:55-14:15 | Συζήτηση σε συρρικνωτικό τμήμα |

**2ο Συνέδριο. Ρόλος των βιοχημικών ορυκτών στην ανάπτυξη  
περιβαλλοντικώς βιώσιμου λύσεων**

| 14:15-14:30 | Θωμάς Καραδώρης, Περιβαλλοντικά Λάθη Βιοσυμπόνιος σε Βιοχημικά  
αρωματικά, INERIS GREECE S.A. |
| 14:30-14:45 | Αλκιβιάδα Σαράκη, Ερευνητικές δομικές περιόδους που παράγονται στον Ουσωτέρο, POLITECHNEION S.A. |
| 14:45-15:00 | Μανώλης Παπαχρύσος, Ανάπτυξη υλικών κατασκευής ΥΠΑ από ύλες  
διαστρώματος με την τρίαθλο βιοχημικός ορυκτός, EΦΗΜΟ ΜΕΤΤΟΙΚΟ ΠΟΥΚΤΕΙΝΟ |
| 15:00-15:15 | Βασίλειος Κρύστης / Κων/ Παπαμιχαήλ, Πελοποννήσιοι Δήμοι για  
την παραγωγή τεχνολογίας εκφρασικού κόλλου, MOTOR OIL |
| 15:15-15:30 | Συζήτηση σε συρρικνωτικό τμήμα |

**3ο Συνέδριο. Περιβαλλοντική Απαξιώση και διαχείριση θηλλών:  
μια άφιξη με προκλήσεις και ευκαιρίες**

| 15:30-15:45 | Ιωάννα Χρυσοχοο, Λειτουργία της ΟΕΔΑ, Ε.Δ.Δ. Ν.Α. |
| 15:45-16:00 | Ευάνθη Κοκκαλάκη, Περιβαλλοντικάς Αποκατάστασης, ΠΕΔΑ |
| 16:00-16:15 | Δημήτρης Λαμπρός, Διαστρώματα ελαφρών από  
μηθανοειδή υπολείμματα εξαρτήσεων  
πετρελαιοπηγών καυσίμων καυσίμων  
μεθανίνη, Α. Αστερικάκης |
| 16:15-16:30 | Ιωάννα Καραλή, LIFE - Cofinenergy: Μια σημαντική ρόλος ιγινές  
αρωματικού υλικού αρωματικού  
Μαλατίου, Παπασοφίας |
| 16:30-16:45 | Δημήτρης Λαμπρός, Διαστρώματα ελαφρών ΝΟΑΑ |
| 16:45-17:00 | Ζωή Διακοπής, Πελοποννήσιοι Δήμοι για πελεκτικά ελαφρών αρωματικών  
functionality, ΑΛΕΚΣΟ ΡΑΦΑΗΛΗ ΠΙΥΡΓΟΥ |
| 17:00-17:15 | Συζήτηση σε συρρικνωτικό τμήμα |

**ΕΤΑΙΡΩΙ**

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D E2.2 “After-LIFE business plan” - LIFE16 ENV/GR/000461
Three thematic sessions were organized in accordance with the great interest of the participating stakeholders:

1) Regulatory framework – Networking with other projects,
2) The role of industrial minerals in the development of environmentally sustainable solutions,
3) Environmental rehabilitation and waste management: a market with challenges and opportunities.

The participants got informed about the project implementation and its outcomes and shared their experiences with the consortium. Through the open discussions, interesting topics were raised, and possible synergies were identified for the project’s sustainability.

- NTUA had discussions with the Aegean Perlite S.A., Perlite Hellas S.A. and Imerys S.A. about the scope and the outcomes of the project.

- The Municipality of Rafina-Pikermi has also contacted other municipalities and public bodies to showcase the aim and the outputs of the project. Moreover, RAFIMUN was in close communication with EDSNA throughout the pilot 2 implementation, presenting the initial objectives and the pilot outcomes as well as inviting them to the project’s networking events. More specifically, Mrs Ioanna Kapsimali representative from EDSNA, participated in the Final Conference of the project where all the project outputs were presented and discussed among the participants. EDSNA has expressed its interest for the application of the ES at its sites since the ES in aligned with the soil properties that is currently used as daily, bottom and vegetation cover. Additionally, RAFIMUN has contacted NORDIA, a Greek company in the field of building materials which has quarries operating under its management. Mrs Eleftheria Tsivou, representative from NORDIA has also participated in the Final Conference of the project and expressed its interest in the potential application of ES in quarries rehabilitation (e.g., as vegetation cover and as structural element of the quarry slopes).

- PMP has contacted the SWAN project (INTEREG).

- Networking with LIFE-IP CEI-Greece.

Networking between the LIFE DIANA and LIFE-IP CEI-Greece was established the last year of the projects’ implementation when pilots’ results were available. Close communication was achieved between the two project management teams through invitations to each other’s workshops and other networking events. To name a few, Mr. Chomatidis, a representative from the LIFE-IP CEI-Greece, participated in the 2nd LIFE DIANA workshop on the 29th/09/2021 and in the final conference on the 16th/12/2021. Similarly, the LIFE-IP CEI-Greece invited LIFE DIANA to its networking event on 22.12.2021.

Since the beginning of our communicational partnership, project’s materials have been regularly exchanged to ensure that both consortiums are updated on the progress and the findings of both projects.

Both projects are in close engagement and share the same vision towards the following subjects:

1. Progress in international standardization in accordance to the circular economy principles – ISO 59000 under development

2. European and national legislation framework and funding opportunities

3. Proposal of standards and technical specifications within the LIFE program for the effective implementation of circular economy in Greece
6.4 A List of proposed additional dissemination activities and products

After the completion of the LIFE DIANA project and within the framework of an After-LIFE Communication Plan, the administrator and the partners will continue dissemination activities strategically targeting specific targeted audiences to disseminate and encourage the implementation and use of the benefits of the Life Diana project.

- **Dissemination to the Industrial Sector.**
  A realistic communication and dissemination plan for the results of the LIFE DIANA project with a focus on the benefits for the Oil Industry sector in addressing the environmental challenge it faces and the direct application of the circular economy in its industrial activities. Emphasis will be given on holding various meetings in both the private and public sectors with oil refining and marketing industries to promote the implementation of the new processes and applications developed under the LIFE DIANA project.

- **Awareness raising and networking with Raw Materials suppliers.**
  A series of informative and synergy contacts will be carried out with industrial minerals raw materials extraction companies relevant to LIFE DIANA process.

- **Dissemination to end users of engineered soil**
  Targeted information on the characteristics of the engineered soil material produced by the LIFE DIANA to direct users such as Landfills and Quarries, but also to the administrations of public authorities and local government bodies such as Municipalities that are responsible for the operation of respective activities.

- **Dissemination to the Scientific Community**
  The LIFE DIANA partners will continue to disseminate and present the results in workshops and major environmental actions and events promoting circular economy applications to the scientific community, by participating in major scientific conferences and forums organized by organizations linked to the aspects and results developed in the project.

- **Maintaining and enhancing the Project website.**
  Important for the continued dissemination of all the latest information and achievements related to the project will be the continued operation of the website www.lifediana.eu available in two languages, English and Greek, through which it will be possible to obtain information and detailed reports on the problems and the way they have been addressed and the results achieved. LIFE DIANA partners will continue to provide information after the end of the project.

- **Informative leaflets.**
  The publicity of the LIFE DIANA project will be disseminated through the distribution of printed leaflets, in Greek and English during the workshops and presentations, and at networking and mediation events, using the communication "tools" we have already developed during the project and by continuous promotion of the LIFE DIANA identity to disseminate the project’s objective and results.
Funding will be provided by the Consortium’s own means.

<table>
<thead>
<tr>
<th>Action</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance and regular updating of the LIFE DIANA website</td>
<td>5.000€</td>
</tr>
<tr>
<td>Maintenance of the social media profiles (LinkedIn, Twitter) created during the project</td>
<td></td>
</tr>
<tr>
<td>Presentation of the project results in conferences, webinars, workshops that are related to the project topics. In these occasions, project dissemination materials will be distributed:</td>
<td>2.500€</td>
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<tr>
<td>Layman’s report</td>
<td>1.000€</td>
</tr>
<tr>
<td>Leaflet</td>
<td>1.000€</td>
</tr>
<tr>
<td>Notice board</td>
<td>500€</td>
</tr>
<tr>
<td>Publications in sectorial magazines</td>
<td>2.000€</td>
</tr>
<tr>
<td>Collaboration with other LIFE projects will be explored, to share best practices and experience</td>
<td>500€</td>
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<tr>
<td>Follow-up the communication with public bodies</td>
<td>500€</td>
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<tr>
<td>Dissemination material will be distributed</td>
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<tr>
<td>Follow-up the communication with raw materials providers</td>
<td>500€</td>
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<tr>
<td>Dissemination material will be distributed</td>
<td></td>
</tr>
<tr>
<td>Follow-up the communication with end-users (landfills and quarries owners)</td>
<td>500€</td>
</tr>
<tr>
<td>Dissemination material will be distributed</td>
<td></td>
</tr>
</tbody>
</table>

7 Bibliography


